Scala Scripting

Scala By the Bay, San Francisco, 12 Nov 2016
Scala has a code-size gap

Scala REPL: lightweight, works great for < 1 line programs, more is problematic
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```scala
def hello() = {
  println("Hello")
}

println("Hello")
```
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SBT: Works great for 1,000 - 100,000 line programs, overkill for small scripts
Scala has a code-size gap

```scala
object Main{
  def main(args: Array[String]): Unit = {
    println("Hello")
  }
}

SBT: Works great for 1,000 - 100,000 line programs, overkill for small scripts
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Ammonite Scala REPL/Scripts

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Ammonite: Scala Scripting

lihaoyi.github.io/Ammonite
Ammonite-REPL

Like the Scala REPL,
Ammonite-REPL

Like the Scala REPL, but better

@ sys.env
res0: Map[String, String] = Map(
  "SHELL" -> "/bin/bash",
  "LOGNAME" -> "lihaoyi",
  "PATH" -> "/usr/local/bin:/usr/bin:/bin:/usr/sbin:/sbin",
  "TERM" -> "xterm-256color",
  "XPC_SERVICE_NAME" -> "0",
  "TERM_PROGRAM" -> "iTerm.app",
  "HOME" -> "/Users/lihaoyi",
  "ITERM_SESSION_ID" -> "w3t0p1:C608B802-E1A7-4411-BFE4-85AD5F97BB38",
  "Apple_PubSub_Socket_Render" -> "/private/tmp/com.apple.launchd.3516aCJ5Lk/Render",
  "COMMAND_MODE" -> "unix2003",
  "USER" -> "lihaoyi"
Ammonite-Scripts

Write Scala without the fuss

lihaoyi ~$ cat foo.sc
println("Hello")
lihaoyi ~$ time amm foo.sc
Compiling foo.sc
Hello

real 0m2.842s
user 0m9.194s
sys 0m0.349s
lihaoyi ~$ time amm foo.sc
Hello

real 0m0.482s
user 0m0.727s
sys 0m0.070s
lihaoyi ~$
Demo: Ammonite REPL
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Ammonite REPL: lightweight, works great for 1 - 10 line programs

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Ammonite REPL: lightweight, works great for 1 - 10 line programs

**Ammonite Scripts: works for 10 - 1,000 line programs**

SBT: Works great for 1,000 - 100,000 line programs, overkill for small scripts
Demo: Ammonite Scripts
Like running scripts with the `scala` command but...

Can you use third party libraries?
Like running scripts with the `scala` command but...

Can you use third party libraries?

- 

Can you import other scripts?

-
Like running scripts with the `scala` command but...

Can you use third party libraries?

- Download jar yourself, download transitive dependencies, use `-cp`, ...

Can you import other scripts?

- No
Like running scripts with the `scala` command but...

Can you use third party libraries?

- `import $ivy.`com.lihaoyi::scalatags:0.6.2`

Can you import other scripts?

- `import $file.foo`
- `import $file.foo.bar`
Like running scripts with the `scala` command but...

Can you use third party libraries?
- `import $ivy.`com.lihaoyi::scalatags:0.6.2`
- `libraryDependencies += "com.lihaoyi" %% "scalatags" % "0.6.2"

Can you import other scripts?
- `import $file.foo`
- `import $file.foo.bar`
Like running scripts with the `scala` command but...

Can you use third party libraries?

- `import $ivy.`com.lihaoyi::scalatags:0.6.2``
- `libraryDependencies += "com.lihaoyi" %% "scalatags" % "0.6.2"`

Can you import other scripts?

- `import $file.foo // loads foo.sc`
- `import $file.foo.bar // loads foo/bar.sc`
Demo: Ammonite Script Imports
Demo: Ammonite Website
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Ammonite REPL: lightweight, works great for 1 - 10 line programs

Ammonite Scripts: works for 10 - 1,000 line programs

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Use Cases

www.lihaoyi.com

www.lihaoyi.com/Resume

github.com/lihaoyi/Ammonite/blob/master/ci/build.sc
Next Steps
Next Steps: need more usage

- Currently about 6-7k downloads a month
- More users = more edge cases get found, more help fixing bugs,
- More users = more info to help set direction of development
Next Steps: need more contributors!

- Lots of people contributing fixes, but still mostly me driving development
- Script-runner was mostly built by two GSOC interns, but they've moved on
- Need more people to sustainably drive project forward
Next Steps: concrete tasks

- IntelliJ support for scripts
- Convert autocomplete to use 2.12 REPL's improved autocomplete
- Experiment with using shapeless for more stable pretty-printing
- Better SBT integration: re-use compiler settings? Plugins?
- Spark support??
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Q & A